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FOREST ENTOMOLOGY BRIEF 3.

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U. S. Department of Agriculture

K E R O S E N E E M U L S I O N

Materials and Amounts for Stock Mixture.

(a) Kerosene . . . . . 2 gallons
(b) Laundry or fish oil soap . . . . .1/2 pound
(c) Water . . . . . 1 gallon

Preparation.

(1) Dissolve the soap in boiling water.
(2) Remove the solution from fire, promptly add the kerosene and **thoroughly agitate** the mixture for about 5 minutes until it becomes creamy—an emulsion. Where a pump is used the agitation is most effectively done by pumping the mixture through the nozzle back into the original container for several minutes.

Note. To avoid boiling, a **naphtha soap** may be used, but the quantity of soap must be doubled and the water must be **soft** (rain water).

Dilution.

To each **two gallons of water** add emulsion:
In Fall and Winter -1 gallon.
In Summer - 1/3 gallon.

Application.

Aim to cover every insect.

Use any spraying device at hand: a tin atomizer is not too crude for small plants and power sprayers with fine nozzles are a necessity for extensive operations. Potash soaps and warm solutions, well strained, prevent clogging of nozzles.

Note. Any of the standard brands of miscible oils on the market may be used in place of Kerosene Emulsion for spraying the bark of trees or shrubs. Directions for use are on the containers and should be followed carefully.

Poisoned Emulsion for Spraying Trees against Borers.

A number of species of tree borers are killed while young by spraying the bark at the proper time with the following preparation:

In each gallon of water used for diluting Kerosene Emulsion or miscible oil dissolve one ounce of sodium arsenate or sodium arsenite.

A. D. HOPKINS,

Forest Entomologist.